

WE CLAIM:

1. A method of associating an URL with a Web object(s) for transport from a server side (their original server) to a client side via the Usenet or a Usenet-like system, the method including the steps of:

- a. Constructing/determining/allocating a URL (Uniform Resource Locator) for the object, and

- b. placing the object on the original server in such a way that this URL

1. contains information necessary to find the object in a Usenet server;

2. indicates that the object has been posted to the Usenet and may be found on a Usenet server; and

3. can be used to transparently retrieve the object from its original server.

2. A method of transporting Web object(s) via a Usenet, the method including:

associating a URL with the Web object as claimed in claim 1,

posting the object on the Usenet;

at a client side, intercepting requests for the object, interpreting them and using information extracted, as a result of the interpretation, to locate the object from a Usenet server.

3. A method as claimed in claim 2, further including the step of:

if the object is not found posted on the Usenet , or its version is not current:

retrieving the object from the original server.

4. A method as claimed in claim 3, further including the steps of:

preferably, receiving digitally signed permission to post the object on behalf of the server and to cancel the expired version, if any, and

preferably, transmitting this permission to one or more of Usenet servers along with the object.

5. A URL useful in accordance with the method of claim 1 or 2.

6. A communication system adapted to distribute Web objects from a web host server to a client, the system having:
 - a Web host server on which the web objects are stored, the web host server being coupled to the WWW,
 - the coupling between the client, the WWW and web host server enabling bi-directional communication,
 - the improvement including
 - providing a first Caching agent intermediate and coupled to the client and WWW and Usenet, and
 - providing a second Caching agent intermediate and coupled to the WWW and the Usenet and the web host server,
 - wherein the first and second Caching agents enable communication of objects between the client and the Web host server to be via either the Internet or the Usenet.

7. A system as claimed in claim 6, wherein the first Usenet agent is an application located on the TCP/IP path from the client to the Web cache.

8. A system as claimed in claim 6, wherein the first Usenet agent performs at least some of the following functions:
 - analyses Web requests containing URLs of required objects,
 - based on the URL, decides, whether an object has been posted to the Usenet by its original server and thus, may be found in the Usenet,
 - if the object has not been posted to the Usenet, the first agent passes the request further for normal processing by the Web server or cache engine,
 - if the object has been posted to the Usenet:

based on its configuration information, the first agent selects one or more available Usenet servers and tries to find the required object on them,

if the object is found, the first agent retrieves it and returns to the client, and / or

if the object is not available, the first agent passes the request for further processing by the original server or a caching engine.

9. A system as claimed in claim 6, wherein the second Usenet agent is located intermediate the web host server and the Internet.

10. A system as claimed in claim 9, wherein the second Usenet agent performs at least some of the following functions:

intercepts requests to the server and identifies those that are requesting Usenet posted objects,

if such a request is found, the second agent cleans up its URL, removing its part that concerns newsgroups or including the required information in the URL and combining it with object placement in such a way, that no further cleaning is necessary,

once cleaned, the URL is passed further for processing by the server or server side cache engine,

tracing events of modification of the server objects that are to be, or have been posted to the Usenet,

if an object has been modified (or created), the second agent cancels its previous versions, if necessary in the Usenet and posts a new digitally signed one, and / or

periodically re-post objects to the Usenet to ensure their availability.

11. A method of creating a URL for use in the Web, the method including the steps of:

providing a first field having information sufficient to locate an object on a web server, and

providing a second field having information sufficient to locate the object on the Usenet.

12. A method as claimed in claim 11, wherein the first field includes an initial URL, and the second field includes a Usenet message ID.

13. A method as claimed in claim 11, wherein the first and second fields are the same and include a Usenet message ID.

14. A method as claimed in claim 13, wherein the message ID is encoded in URL query parameters.

15. A method as claimed in claim 11, wherein the URL is created in a manner where a relatively simple and relatively unambiguous reverse transformation exists.

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